

**ABSTRACT**

The invention provides an organometallic complex, containing oxygen free organic ligands, for the deposition of a metal, preferably copper, silver or gold, and preferably by way of chemical vapor deposition. The organometallic complex having the formula



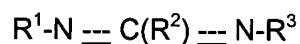
where M is a metal preferably selected from the group consisting of Cu, Ag and Au;  
 $D_o$  is selected from the group comprising ethers, phosphines, olefins, sulfides, pyridines, carbonyl, hydroxyl, cyclopentadiene, benzene derivatives, allyls, alkyls, amines, polyamines, aniline derivatives, cyclooctadiene and combinations thereof;

n is an integer having a value from 0 to 4;

k is an integer having a value from 1 to 4;

x is an integer having a value from 1 to 4; and

L is an amidinate ligand of the formula



where  $R^1$ ,  $R^2$  and  $R^3$  are selected from the group consisting of alkyls, allyls, aryls, heteroaryls, hydrogen, non-metals and metalloids; and where  $R^1$ ,  $R^2$  and  $R^3$  are different or the same.